CLAIMS:

We claim:

1.   A system for port and protocol sharing comprising:

a layered hierarchy of application processes and protocols;

an interlayer communications process disposed between each layer in said

layered hierarchy; and,

a communications layer programmed to moderate access by all of said

application processes and protocols in said layered hierarchy to a single logical port.

2.   The system of claim 1, wherein each said interlayer communications process

comprises:

a list of application process and protocols coupled to said interlayer

communications process at a next higher level in said hierarchy; and,

at least one discrimination process programmed to select a particular one of said

application process and protocols in said list to which to route selected incoming traffic.

3.   The system of claim 1, wherein said communications layer comprises a process

programmed to map incoming traffic in said single logical port to selected ones of said

application process and protocols.

4.   The system of claim 2, wherein said at least one discrimination process

comprises at least one selectable discrimination algorithm based upon at least one

attribute associated with at least one of said application processes and protocols.

5.   The system of claim 4, wherein said at least one attribute comprises an attribute selected from the group consisting of a number of layers of application processes and protocols disposed within said hierarchy above said interlayer communications process, a weighting of said application processes and protocols in said list; a catch-all to handle applications and protocols in said list which are not selective in nature, previous context characteristics for said applications and protocols in said list, and overall system characteristics.

6.   The system of claim 2, wherein said at least one selectable discrimination algorithm comprises a pluggable discrimination algorithm.

7.   In a hierarchy of layered applications and corresponding protocols, a port and protocol sharing method comprising the steps of:

receiving traffic over a single shared logical port and routing said traffic to an interlayer communications process disposed between two layers in the hierarchy;

selecting a particular application/protocol layer in a higher one of said two layers to which said traffic is to be routed; and,

routing said traffic to said selected particular application/protocol layer.

8.   The method of claim 7, further comprising the steps of

further selecting a subsequent application/protocol layer in a higher one of two other layers to which said traffic is to be routed; and,

routing said traffic to said further selected particular application/protocol layer.

9. The method of claim 7, further comprising the steps of:

adding an additional application/protocol layer to the hierarchy;

considering said additional application/protocol layer in said selecting step; and,

when selected, routing said traffic to said additional application/protocol layer.

10. The method of claim 7, wherein said selecting step comprises the step of

selecting a particular application/protocol layer based upon at least one attribute of said

particular application/protocol layer selected from the group consisting of a number of

layers of application processes and protocols disposed within the hierarchy above said

interlayer communications process, a weighting of said application processes and

protocols; a catch-all to handle individual ones of said applications and protocols which

are not selective in nature, previous context characteristics for said applications and

protocols, and overall system characteristics.

11. A method for augmenting a hierarchy of layered applications and corresponding

protocols, the method comprising the steps of:

applying a discrimination algorithm to a selection process in which a particular

application/protocol layer in a listing of adjacent application/protocol layers is selected to

receive traffic flowing through the hierarchy;

inserting a new application/protocol layer adjacent to said particular

application/protocol layer in the hierarchy;

adding said new application/protocol layer to said listing; and,

replacing said discrimination algorithm with another discrimination algorithm programmed to consider said new application/protocol layer during said selection process.

12. The method of claim 11, further comprising the steps of performing said inserting, adding and replacing steps without decoupling or disabling other applications and protocols in the hierarchy.

13. The method of claim 11, wherein said applying step comprises the step of applying said discrimination algorithm to select a particular application/protocol layer based upon at least one attribute of said particular application/protocol layer selected from the group consisting of a number of layers of application processes and protocols disposed within the hierarchy, a weighting of said application processes and protocols; a catch-all to handle individual ones of said applications and protocols which are not selective in nature, previous context characteristics for said applications and protocols, and overall system characteristics.

14. A machine readable storage having stored thereon a computer program for port and protocol sharing in a hierarchy of layered applications and corresponding protocols, the computer program comprising a routine set of instructions which when executed cause the machine to perform the steps of:

receiving traffic over a single shared logical port and routing said traffic to an

interlayer communications process disposed between two layers in the hierarchy;

selecting a particular application/protocol layer in a higher one of said two layers

to which said traffic is to be routed; and,

routing said traffic to said selected particular application/protocol layer.

15.   The machine readable storage of claim 14, further comprising the steps of

further selecting a subsequent application/protocol layer in a higher one of two

other layers to which said traffic is to be routed; and,

routing said traffic to said further selected particular application/protocol layer.

16.   The machine readable storage of claim 14, further comprising the steps of:

adding an additional application/protocol layer to the hierarchy;

considering said additional application/protocol layer in said selecting step; and,

when selected, routing said traffic to said additional application/protocol layer.

17.   The machine readable storage of claim 14, wherein said selecting step

comprises the step of selecting a particular application/protocol layer based upon at

least one attribute of said particular application/protocol layer selected from the group

consisting of a number of layers of application processes and protocols disposed within

the hierarchy above said interlayer communications process, a weighting of said

application processes and protocols; a catch-all to handle individual ones of said

applications and protocols which are not selective in nature, previous context characteristics for said applications and protocols, and overall system characteristics.

18.   A machine readable storage having stored thereon a computer program for augmenting a hierarchy of layered applications and corresponding protocols, the computer program comprising a routine set of instructions which when executed cause the machine to perform the steps of:

applying a discrimination algorithm to a selection process in which a particular application/protocol layer in a listing of adjacent application/protocol layers is selected to receive traffic flowing through the hierarchy;

inserting a new application/protocol layer adjacent to said particular application/protocol layer in the hierarchy;

adding said new application/protocol layer to said listing; and,

replacing said discrimination algorithm with another discrimination algorithm programmed to consider said new application/protocol layer during said selection process.

19.   The machine readable storage of claim 18, further comprising the steps of performing said inserting, adding and replacing steps without decoupling or disabling other applications and protocols in the hierarchy.

20.   The machine readable storage of claim 18, wherein said applying step comprises the step of applying said discrimination algorithm to select a particular

application/protocol layer based upon at least one attribute of said particular

application/protocol layer selected from the group consisting of a number of layers of

application processes and protocols disposed within the hierarchy, a weighting of said

application processes and protocols; a catch-all to handle individual ones of said

applications and protocols which are not selective in nature, previous context

characteristics for said applications and protocols, and overall system characteristics.